Rev. 01.29.09 LDO03C 1 of 4

# **LDO03C Series**15 Watts

Total Power: 15 Watts
Input Voltage: 3-13.8 Vdc
No. of Outputs: Single

### **Special Features**

- 3 A output current rating
- Input voltage range: 3-13.8 Vdc
- Adjustable out voltage: 0.59-5.1 V
- Optional factory setting with power good
- Excellent transient response
- Power enable
- Minimum airflow
- Small package
- Termination voltage capability
- RoHS compliant

### Safety

UL, cUL 60950-1 TÜV Product Service (EN60950) Certificate No. TBD CB Report and Certificate to IEC60950



## **Electrical Specifications**

| •                                  |                        |   |
|------------------------------------|------------------------|---|
| Output                             |                        |   |
| Output voltage                     | See Note 5             | 0.59-5.1 V  |
| Output setpoint accuracy           | 0.1% trim resistors    | ±1.0%   |
| Line regulation                    | Low line to high line  | ±0.5%   |
| Load regulation                    | Full load to min. load | ±0.5%   |
| Min./max. load                     |                        | 0 A/3 A   |
| Overshoot                          | At turn-on             | 0.5% max.   |
| Undershoot                         | At turn-off            | 100 mV max.   |
| Ripple and noise<br>5 Hz to 20 MHz | See Note 1             | 25 mV<br>Vin=5 V, Vout=2.5 V                        |
| Transient response                 | See Notes 1, 2         | 235 mV max. deviation 20 $\mu s$ recovery to within |

|                         |   | regulation band    |
|-------------------------|---|--------------------|
| Input                   |   |                    |
| Input voltage range     |   | 3-13.8 Vdc         |
| Input current           | Minimum load<br>Remote OFF              | 50 mA<br>5 mA      |
| Input current (max.)    | See Note 3                              | 3 A @ lo max.      |
| Start-up time           | Power up<br>Remote ON/OFF               | 3 ms<br>2 ms       |
| General                 |   |                    |
| Efficiency (high input) | Vin=5 V, Vo=2.5 V, lo=3 A               | 90%                |
| Switching frequency     | Fixed                                   | 1.5 MHz            |
| Material flammability   |   | UL94V-0            |
| Weight                  |   | 1.7 g (0.06 oz.)   |
| MTBF                    | 12 V @ 40 °C, 100% load<br>Bellcore 332 | 10,000,000 hours   |
| Coplanarity             | Surface mount models                    | 150 <sub>µ</sub> m |
|                         |   |                    |



Rev.01.29.09 LDO03C

# **Environmental Specifications**

| Thermal performance<br>See Note 5 | Operating ambient<br>Non-operating ambient | -40 °C to +85 °C<br>-40 °C to +125 °C |  |  |  |  |
|-----------------------------------|--|---------------------------------------|--|--|--|--|
| Protection                        |  |                                       |  |  |  |  |
| Short-circuit                     |  | Hiccup, non-latching                  |  |  |  |  |
| Overvoltage protection            |  | Hiccup, non-latching                  |  |  |  |  |
| Recommended System Capacitance    |  |                                       |  |  |  |  |
| Input                             | See Note 6                                 | 0 μF                                  |  |  |  |  |
| Output                            | See Note 7                                 | 0 μF                                  |  |  |  |  |

| Ordering Information      |                  |                   |                             |                             |                         |              |                |                                  |
|---------------------------|------------------|-------------------|-----------------------------|-----------------------------|-------------------------|--------------|----------------|----------------------------------|
| Output<br>Power<br>(Max.) | Input<br>Voltage | Output<br>Voltage | Output<br>Current<br>(Min.) | Output<br>Current<br>(Max.) | Efficiency<br>(Typical) | Regu<br>Line | lation<br>Load | Model<br>Number <sup>(3,5)</sup> |
| 15W                       | 3-13.8 Vdc       | 0.59-5.1 V        | 0 A                         | 3 A                         | 90%                     | ±0.2%        | ±0.5%          | LDO03C-005W05-VJ                 |
| 15W                       | 3-13.8 Vdc       | 0.59-5.1 V        | 0 A                         | 3 A                         | 90%                     | ±0.2%        | ±0.5%          | LDO03C-005W05-HJ                 |
| 15W                       | 3-13.8 Vdc       | 0.59-5.1 V        | 0 A                         | 3 A                         | 90%                     | ±0.2%        | ±0.5%          | LDO03C-005W05-SJ                 |

### Part Number System with Options

| Product Family                     | Rated Output<br>Current               | Performance                          | Input Voltage                  | Number of Pins Type of Output                    | Output Voltage                    | Mounting Option  | Custom Option | RoHS Compliance  |
|------------------------------------|---------------------------------------|--------------------------------------|--------------------------------|--|-----------------------------------|--|---------------|--|
| LDO                                | 03                                    | C -                                  | - 00                           | 5W   | 05                                | - V  | X             | J  |
| Product Family<br>LDO = LDO Series | Rated Output<br>Current<br>03 = 3 Amp | Performance<br>C = Cost<br>Optimized | Input Voltage<br>00 = 3-13.8 V | Type of Output<br>5W = 5 Pins and<br>Wide Output | Output Voltage<br>05 = 0.59-5.1 V | Mounting Option V = Vertical H = Horizontal S = Horizontal SMT VS = Vertical SMT | Custom Option | RoHS Compliance<br>J = Pb free (RoHS<br>6/6 compliant) |

#### **Output Voltage Adjustment of the LDO03C Series**

The ultra-wide output voltage trim range offers major advantages to users who select the LDO03C series. It is no longer necessary to purchase a variety of modules in order to cover different output voltages. The output voltage can be trimmed in a range of 0.59-5.1 Vdc. When the LDO03C converter leaves the factory, the output has been adjusted to the default voltage of 0.59 V.

#### Notes:

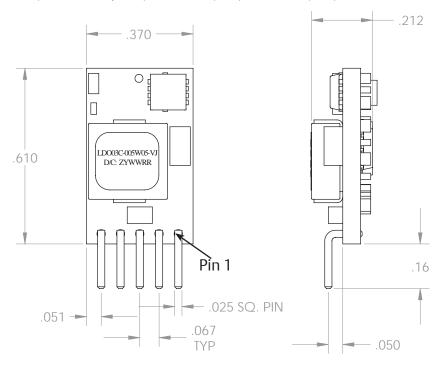
- 1. Measured as per recommended system capacitance. See Technical Reference Note.
- 2.  $di/dt = 10 \text{ A/}\mu\text{s}$ , Vin = Nom, Tc = 25 °C, load change = 0.50 lo to full lo and full lo to 0.50.
- 3. External input fusing is recommended.
- 4. Additional part numbers may be available with different output voltages.
- 5. Airflow dependent, 100 LFM minimum required.
- 6. No capacitors needed for ripple current stability.
- 7. No capacitors needed for stability.
- 8. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please consult your local sales representative for details.
- NOTICE: Some models do not support all options. Please contact your local Emerson Network Power representative or use the on-line model number search tool at http:// www.powerconversion.com/powergroup/products.htm to find a suitable alternative.

# **Mechanical Drawings**

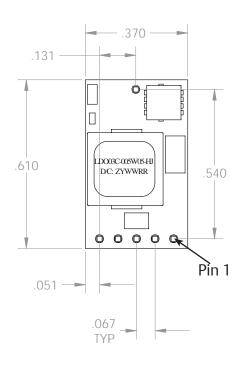
Rev. 01.29.09 LDO03C 3 of 4

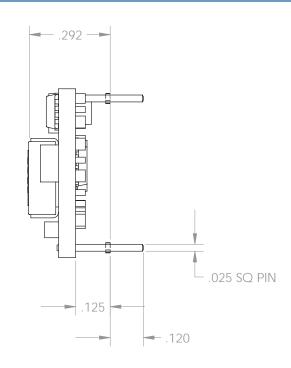
### **Vertical Mount**

Dimensions in inches (mm). Tolerances es (unless otherwise specified) 2 Places  $\pm 0.030$  ( $\pm 0.76$ ) 3 Places  $\pm 0.010$  ( $\pm 0.25$ )



### **Horizontal Mount**

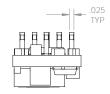


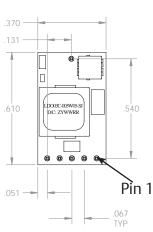


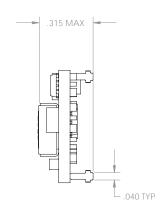
Rev. 01.29.09 LDO03C 4 of 4

# Mechanical Drawings (Cont'd)

#### **Horizontal Surface Mount**







#### **Pin Assignments**

#### Single Output

- 1. Enable
- 2. Vin
- 3. Common/RTN
- 4. Vout
- 5. PG/Trim
- 6. Mech Pin (Horz/SMT only)

#### **Americas**

5810 Van Allen Way Carlsbad, CA 92008

Telephone: +1 760 930 4600 Facsimile: +1 760 930 0698

#### **Europe (UK)**

Waterfront Business Park Merry Hill, Dudley West Midlands, DY5 1LX United Kingdom

Telephone: +44 (0) 1384 842 211 Facsimile: +44 (0) 1384 843 355

#### Asia (HK)

16th - 17th Floors, Lu Plaza 2 Wing Yip Street, Kwun Tong Kowloon, Hong Kong Telephone: +852 2176 3333

Facsimile: +852 2176 3888

#### For global contact, visit:

#### www.powerconversion.com

For technical support, visit:

### http://www.powerconversion. com/support/product/technical-support.php

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

Printed in U.S.A.

#### **Emerson Network Power.**

The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- Embedded Power
- Inbound Power
- Integrated Cabinet Solutions
- Outside Plant
- Precision Cooling
- Site Monitoring and Services

#### EmersonNetworkPower.com

Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co. ©2008 Emerson Electric Co.

<sup>\*</sup>This is a Preliminary Datasheet. Emerson Network Power reserves the right to make changes to the information contained herein without notice and assumes no liability as a result of its use or application.